


ALVIN J. WATSON

SERIAL NO. 09/542,032

The Examiner has rejected claims 1-7, 9-10 and 14-16 under 35 U.S.C. § 102(b) as being anticipated by Lipo et al., U.S. Patent No. 5,272,429. Applicant has amended such claims to more accurately define the invention for which protection is sought. Reconsideration of the Examiner's rejection of claims 1-7, 9-10 and 14-16 is respectfully requested in view of the following comments.

Claim 1 defines a system for controlling the speed of an AC electric motor connected to a cyclical load. The system includes a single conversion circuit to convert an AC electric signal to a DC electric signal. A signal measurement circuit samples the DC electric signal and derives a DC electric characteristic signal corresponding to a motor attribute in response thereto. A control circuit having an AC current signal stored thereon is provided. The control circuit drives a reference signal in response to a set point parameter and compares the DC electric characteristic signal and the DC current signal with the reference signal to generate control signals in response thereto. A signal inversion circuit generates a drive signal in accordance with the control signals that modifies the speed of the AC electric motor. As hereinafter described, the cited reference does not show or suggest generating control signals responsive to a comparison of the DC electric characteristic signal and the DC current signal with the reference signal.

The Examiner suggests that Fig. 6 of the Lipo et al., '424 patent teaches each and every element of claim 1 by the present invention. The Lipo et al '429 patent discloses a method and apparatus for determining air gap flux in an operating alternating current machine by using the third harmonic component of the stator phase voltage. The air gap flux is used to facilitate performance and efficiency of the alternating current machine. In operation, once the AC machine has reached a steady state condition, the torque of the electric motor is estimated and defined as the reference value for a torque regulator. The torque is computed from the measured stator current and the air gap flux. The calculated output torque of the electric motor is compared with the torque reference such that if the output torque decreases, the torque error increases and the torque regulator generates a



ALVIN J. WATSON

SERIAL NO. 09/542,032

change in the synchronous frequency of the electric motor in order to adjust the torque back to its original value. See, Lipo et al., U.S. Patent No. 5,272,429, Column 13, Lines 4-40. As such, unlike the system defined in independent claim 1, the system in the Lipo et al., '429 patent monitors the actual torque and compares it with a reference which is calculated when the machine has reached a steady state condition. In response to the difference, the system in Lipo generates a change in the synchronous frequency. On the other hand, the control signals generated by the control circuit defined in independent claim 1 are generated in response to a comparison of a DC electric characteristic signal and a pre-stored DC signal with a reference signal (underlining added). Nothing in the Lipo et al., '429 patent shows or suggests using a pre-stored DC signal to generate control signals in response thereto. As such, it is believed that independent claim 1 defines over the cited reference, and passage to allowance is respectfully requested.

Claims 2-7 and 9-10 depend either directly or indirectly from independent claim 1 and further define a system not shown or suggested in the prior art. It is believed that claims 2-7 and 9-10 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Referring to independent claim 14, a method is provided for controlling the speed of a variable drive system driven AC electric motor. The method includes the steps of generating control signals in response to a set of DC electric characteristic signals, a predetermined DC current signal and a set point parameter. As heretofore described, nothing in the Lipo et al., '429 patent shows or suggests generating control signals response to a DC electric characteristic signal and a predetermined DC current signal. Hence, it is believed that independent claim 14 defines over the cited reference and passage to allowance is respectfully requested.

Claims 15 and 16 depend either directly or indirectly from independent claim 14 and further define a method not shown or suggested in the prior art. It is believed that claims 15-16 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.




ALVIN J. WATSON

SERIAL NO. 09/542,032

Applicant believes that the present application, with claims 1-7, 9-16, 18-21 and 24-29, is in proper form for allowance and such action is earnestly solicited.

Respectfully submitted,



Peter C. Stomma, Reg. No. 36,020

Boyle Fredrickson Newholm Stein & Gratz S.C.  
250 East Wisconsin Avenue, Suite 1030  
Milwaukee, WI 53202  
Phone: (414) 225-9755  
Fax: (414) 225-9753  
Docket No.: 297.009